5-2016

Pre-Employment Testing to Improve Nurse Retention

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by

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A thesis submitted to the faculty of
Gardner-Webb University Hunt School of Nursing
in partial fulfillment of the requirements for the
Master of Science in Nursing Degree

Boiling Springs, North Carolina

2016

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Abstract

Nurse retention is an issue healthcare organizations cannot afford to ignore. The nursing shortage continues to impact healthcare in this country which increases the importance and urgency of retaining nurses. Job success, also referred as job satisfaction, is a key indicator of a nurse's intent to stay. There are pre-employment tests that were designed specifically for healthcare organizations to help them choose applicants that are most likely to be successful resulting in better patient outcomes and improved nurse retention. The purpose of this study was to compare the perceived job satisfaction and intent to stay of nurses that completed pre-employment testing against those that did not complete pre-employment testing. Data was collected from 111 bedside nurses through the use of the Individual Workload Perception Scale – Revised survey tool to determine if there was a difference in job satisfaction and intent to stay between nurses that completed pre-employment testing and those that did not. A comparative analysis was used to examine the differences and their level of significance. The mean scores for two questions were significantly different indicating nurses who had completed pre-employment testing were more satisfied with their jobs and had a stronger intent to stay. Pre-employment testing could improve nurse retention for healthcare organizations by assisting nursing leaders in deciding where the applicant would be most successful.

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CHAPTER I

Introduction

The nursing shortage has been an ongoing problem that has affected healthcare organizations across the country. The shortage is expected to intensify as more Baby Boomers are retiring and the need for healthcare continues to grow. Nursing schools have not been able to expand capacity and meet demand. High turnover is one of many contributors to the nursing shortage (Shwu-Ru, 2009). The effects of nursing turnover can be extremely costly to healthcare organizations. Nursing turnover can compromise quality of care and consume education and labor resources. Internal transfers between departments along with leaving the organization can be considered in the turnover rate. Pre-employment testing continues to become more and more popular among healthcare organizations attempting to improve nurse retention. Research involving pre-employment testing (Stabile, 2002) has linked personality to job performance while questioning the validity of the tests. However, there is limited research on the effects of pre-employment testing on nurse retention and supporting the validity of the test through statistical data and theory.

Problem Statement

The assumption is pre-employment testing improves nurse retention. There are pre-employment tests that were designed specifically for healthcare organizations to help them choose applicants that are most likely to be successful resulting in better patient outcomes and improved nurse retention. This study compared the perceived job satisfaction and intent to stay of nurses that completed pre-employment testing against those that did not complete pre-employment testing. Evidence is needed to support that

pre-employment testing has a positive impact on nurse retention. Job success is a key variable used to predict nursing retention in research (Murrells, Robinson, & Griffiths, 2008). Employers are wondering whether an applicant has the desire to do the job as their culture and climate need them to. Will they fit in and be motivated? What strengths would the applicant bring to the organization? Employers are expected to cut cost and save resources by obtaining the answers to these questions at the beginning of the hiring process.

Justification of the Research

In December of 2013, the Bureau of Labor Statistics released projections for the growth of the registered nurse workforce through 2022. Registered Nursing is listed as one of the top occupations in this category with an expected increase of 19.4% or 526,800 registered nurses (Occupations with the largest projected number of job openings due to growth and replacement needs, 2012 and projected 2022, 2012). The Bureau of Labor Statistics also projects there will be a shortage of 525,000 registered nurses due to growth and replacement needs. The magnitude of a deficit that size would be quadruple the amount of any registered nursing shortage experienced in America since the 1960s when Medicare and Medicaid was introduced (Buerhaus, 2009).

Healthcare organizations must prepare for the future by focusing on nursing retention efforts to preserve their quality of care. These numbers predict that educational institutions will not produce the number of registered nurses needed to meet demand. Pre-employment testing is becoming a popular tool to improve nurse retention. Staiger, Auerbach, and Buerhaus (2012) found that hospital attrition rates were down due to the

recession. Nursing leaders need to know the significance and validity of pre-employment testing on nursing retention to best prepare their healthcare organizations for the future.

Purpose

The purpose of this thesis was to determine the job satisfaction and intent to stay of nurses that participated in pre-employment testing compared to nurses that did not. Nursing leaders may be skeptical about the validity and have limited knowledge of pre-employment testing and not consider its results when selecting an applicant. Pre-employment personality tests are believed to be invalid and can be faked (Beau, 2013). Pre-employment tests should be professionally developed and validated to ensure nursing leaders will consistently consider the results when selecting candidates. "No test or selection procedure should be implemented without an understanding of its effectiveness and limitations for the organization, its appropriateness for a specific job and whether it can be appropriately administered and scored" ("Employment Tests and Selection Procedures," 2010, p. 5).

Thesis Question

This study addressed the following research question:

- What is the difference in job satisfaction and intent to stay between nurses that completed pre-employment testing and those that did not?

Pre-employment tests are currently used in the healthcare world to help predict success of nurses in the clinical setting and management. Providing information that supports the validity and effects of pre-employment testing will help to ensure healthcare organizations are making good choices to better prepare for the future.

Theoretical and Conceptual Framework

The Theory of Reasoned Action, developed by Martin Fishbein and Icek Ajzen, was used to guide this study (McEwen & Wills, 2011). The Theory of Reasoned Action suggests that a person's behavioral intention depends on the person's attitude about the behavior and subject norms. If the intention is there, they will probably follow through with the behavior. This theory explains the relationships among behavioral intention (job satisfaction), attitude (personality) and subjective norms (relationships). Figure 1 reflects how behavior and knowledge along with perceived relationships can predict behavioral intentions, probably leading to the intended behavior. McEwen and Wills (2011) believe the theory of reasoned action assumes people are rational and make decisions based on the information they have. In other words, the Theory of Reasoned Action helps us to understand and predict individual behaviors that are individually controlled. A person's behavior is predicted by their attitude toward that behavior and how they think people they value would view them if they performed the behavior. If a person intends to do a behavior then it is likely that the person will do it.

Subjective norm is described by the Theory of Reasoned Action as a combination of perceived expectations from individuals or groups along with intentions to comply with these expectations. It is a person's perception that most of the people that are important to them would think that they should or should not carry out a certain behavior. Subjective norms apply pressure which facilitates an action of a certain behavior independently of the individual's attitude towards that behavior (Natan, Beyil, & Neta, 2009). Subjective norms in this study are defined as the nurse's perception of their relationships with their manager and co-workers. The Individual Workload Perception

Scale provides insight to whether nurses perceive that their managers are concerned with their needs.

Attitude consists of feelings, beliefs, intentions, and perceptions. It is described by the Theory of Reasoned Action as beliefs about the effects of carrying out those behaviors in addition to their valuation of the consequences. McEwen and Wills found "A person's attitude towards a behavior can be predicted by multiplying the evaluation of each of the behavior's consequences by the strength of the belief" (McEwen & Wills, 2011, p. 293). Attitude in this study represents an applicant's personality and defined as an applicant's perception of the possible job opportunity and their intentions of success. Pre-employment testing provided insight on the applicant's attitude determining their likelihood of being a good fit for the organization.

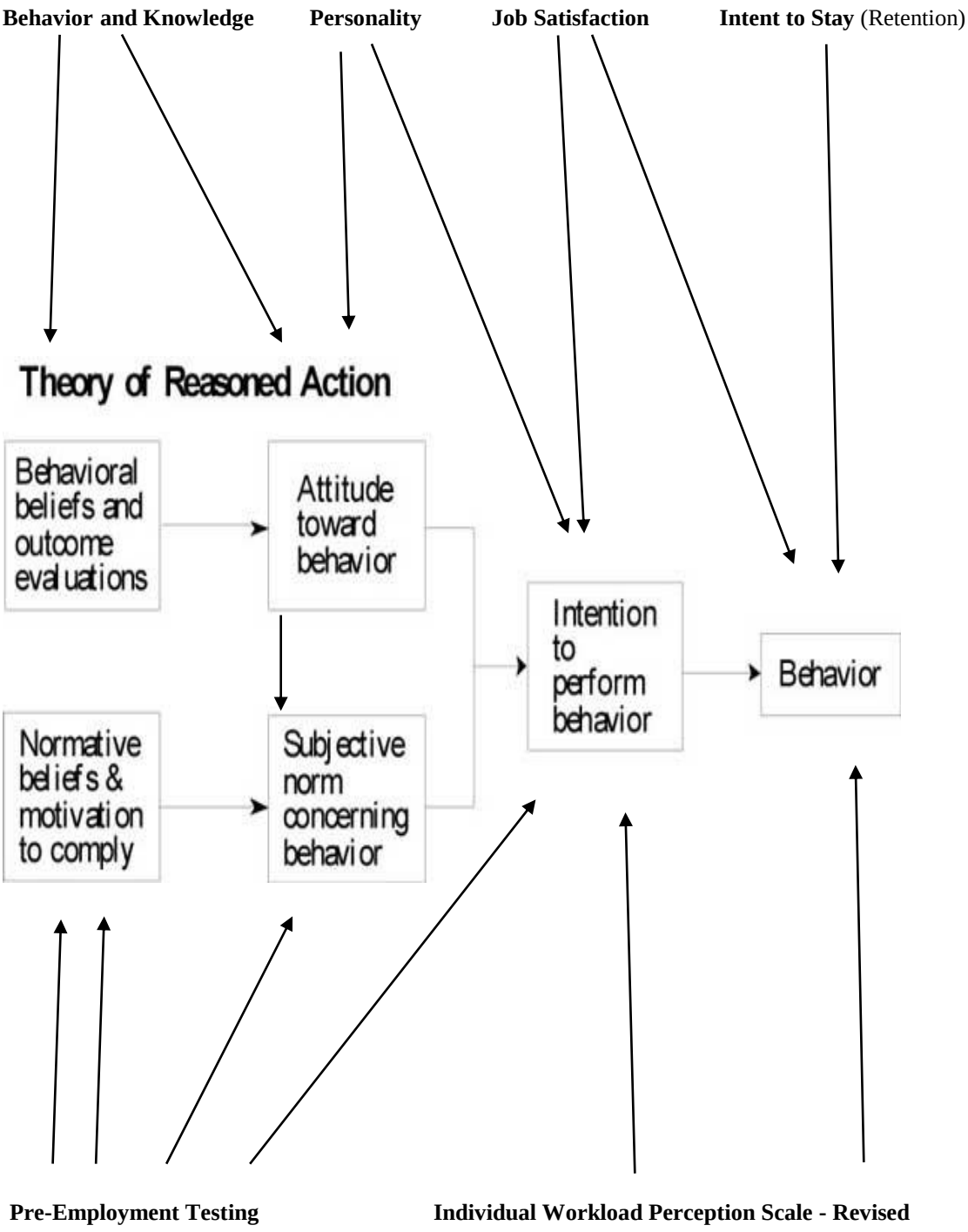
The Theory of Reasoned Action defines "Behavioral Intention" as a measure of an individual's relative strength of intention to carry out a certain behavior. Behavioral intention in this study is defined as nurses' intentions to stay based on their perception of their job satisfaction. Behavioral intention can be predicted by analyzing pre-employment test scores along with scores from the Individual Workload Perception Scale.

Definition of Terms

- Personality is the total number of ways a person can react to and interact with others (Beau, 2013).
- Job satisfaction is the overall nursing satisfaction score obtained by averaging all subscales included in the Individual Workload Perception Scale (Lacey et al., 2007).

- Intent to stay is the likelihood that a nurse will continue to work in their current position for the next year (Lacey et al., 2007).
- A pre-employment test is a tool used to measure the expected job success of an applicant using questions regarding a clinical, behavioral, and situational component (Biddle, Gonzalez, Juengel, & Ramon, 2012).

Conceptual Model Middle–Range Theory



Empirical Indicators

Figure 1: Fishbein's and Ajzen's Theory of Reasoned Action—Predicting Nurses' Intentions to Remain Employed

CHAPTER II

Review of Literature

Providing support for the validity of pre-employment testing and its effect on nurse retention and predictability of job success or job satisfaction could provide skeptical nursing leaders some assurance they are using an effective tool to hire quality nurse candidates and place them in a position to be successful. Nurse retention will be vital to healthcare organizations that plan to continue to provide the same high quality of care during future nursing shortages. This study included a limited review of research. Database searches including CINAHL, Google Scholar, and ProQuest were used with the following key words: pre-employment test, retention, nurse turnover, personality testing, job performance, job satisfaction, job success, clinical-competence assessment, intent to stay, situational judgement tests, and turnover intentions. Current research on pre-employment testing is limited.

Intent to Stay

Nursing shortage and turnover affect healthcare organizations' quality of care, work environments and patient safety. They can make nurse retention efforts very challenging. Dr. Kovner and colleagues discovered recently graduated nurses are more likely to work in hospitals and found 13% had changed jobs within their second year and 37% reported they were ready for a change (Kovner et al., 2007). They used a cross-sectional, two-stage design to supply descriptive evidence of newly licensed nurses' characteristics and attitudes toward work. Data was collected through the use of a survey containing questions regarding participant characteristics, work environment, participants' attitudes toward work, and job opportunities. Surveys were completed by

nurses with less than 18 months of experience. Twenty five percent of participants reported a lack of support from leadership and insufficient resources to complete nursing tasks. The nurses ready for a change reported working overtime, job related injuries, and verbal abuse (Kovner et al., 2007). Fifty one percent worked voluntary overtime, 13% worked mandatory overtime, 25% experienced at least one needle stick, 39% had at least one strain or sprain, 21% reported a cut, 46% obtained a bruise, and 62% reported experiencing verbal abuse (Kovner et al., 2007). Job burnout and stress can lead to dissatisfaction causing nurses to evaluate their current employment. Nursing orientation and improved leadership was recommended to improve nurse retention efforts.

Lacey et al. (2007) conducted a quantitative analysis and discovered the Magnet Recognition Program has had a positive impact on improving the nursing work environment which influences nurse satisfaction and intent to stay. The Magnet Recognition Program was created to improve nurse retention by maintaining a desirable work environment that promotes professional nursing practice and better patient outcomes (Lacey et al., 2007). They used the Individual Workload Perception Scale in their study which consists of 32 Likert scale questions regarding manager support, peer support, unit support, workload, intent to stay, and nurse satisfaction. The convenience sample consisted of 3,337 nurses from 11 states, 15 healthcare organizations, and 292 different nursing units. The purpose of their study was to determine and analyze the differences of nurses' perceptions of the six subscales listed above from Magnet, Magnet-aspiring, and non-Magnet hospitals. Analysis of variance was performed to evaluate differences among scores for subscales of the Individual Workload Perception Scale and significance was determined by the Turkey post hoc test. The mean scores for all

subscales were highest in Magnet organizations, and Magnet-aspiring organizations had better scores than non-Magnet organizations (Lacey et al., 2007). This indicated nurse satisfaction and intent to stay was better among Magnet organizations and organizations working to achieve Magnet status. All scores had a P-value of .000. Manager support and peer support between Magnet and Magnet aspiring hospitals (.003) and workload between Magnet-aspiring and non-Magnet hospitals (.002) remained significant. Manager support (.152) and intent to stay (.261) between Magnet-aspiring and non-Magnet hospitals did not remain significant (Lacey et al., 2007). This study recommended that healthcare organizations who reach Magnet status continue to support and maintain a positive work environment by using the Individual Workload Perception Scale to conduct a yearly appraisal of nurse satisfaction.

Jones and Gates (2007) reported healthcare organizations make decisions regarding nurse retention without understanding its costs and benefits. They determined the cost of poor retention at $22,000 to $64,000 per nurse turnover. Historically, turnover costs variated from 0.75 to 2.0 times the pay of the previously employed nurse and was estimated at 1.3 in 2004 (Jones & Gates, 2007). Jones and Gates discussed the cost and benefits related to retention, examined the use of benefit-cost and cost-effectiveness analysis and suggested a business case for nurse retention is necessary to report its value. Patient safety, quality of care, patient satisfaction, nurse satisfaction, and nurse safety have all been identified as benefits of nurse retention (Jones & Gates, 2007). The costs of nurse retention are associated with the efforts to maintain and improve retention. Those efforts could include a nurse mentoring program, regular pay increases, tuition reimbursement, nursing forums, self-scheduling, and a commitment from leadership.

Healthcare organizations with turnover rates between 4% and 12% reported lower mortality rates and lower patient lengths of stay compared to healthcare organizations that reported turnover rates between 12% and 22% or higher (Jones & Gates, 2007). A business case for nurse retention would be based on rates of return on nurse retention investments, break-even points, results of a cost-benefit analysis, and easily modified to adjust to constant changes occurring in healthcare (Jones & Gates, 2007). Many healthcare organizations rely on federal reimbursement for services which is heavily affected by the quality of care they provide and patient outcomes. The National Database of Nursing Quality Indicators reports a significant relationship between job satisfaction and patient outcomes ("Nurse Job Satisfaction Linked to Patient Outcomes," 2013). Survey data showed an increase of 25% in nurses' job enjoyment, 29% in their intent to stay and 20% in quality of care when they were satisfied ("Nurse Job Satisfaction Linked to Patient Outcomes," 2013). This indicates a strong relationship between job satisfaction and intent to stay. Joo and Park (2010) discovered that job satisfaction is evaluated frequently as a subjective job success that is defined by the person's satisfaction with their job accomplishments.

Poor nurse retention can be very costly due to the resources that are consumed to recruit and train newly employed nurses and the negative effects on quality of care and patient outcomes. Insufficient financial resources may cause layoffs, resulting in an increased nurse-patient ratio and possibly reducing quality of care. An increase in poor patient outcomes could affect the amount of reimbursement received from Medicare and Medicaid. There are nurse retention tools available to healthcare organizations to assist them in retention efforts. Pre-employment tests could be used as a retention tool by

implementing them into the hiring process and possibly placing nurse applicants in areas where they will most likely be successful and satisfied.

Pre-Employment Testing

Pre-employment tests are becoming popular tools that healthcare organizations can use to improve the quality of their hiring process. Federal reimbursement is driving quality measures and increasing the focus of customer satisfaction in healthcare. Due to the competitive nature of healthcare and the problems with traditional hiring methods, personality and behavioral testing and situational judgement tests are being used to select nurse applicants that will most likely be successful (Biddle et al., 2012). Pre-employment tests for healthcare organizations can include assessments for clinical knowledge, personality/behavioral and situational judgement (Biddle et al., 2012). In a report by Sloan (2011), The Baptist Health System and Saint Luke's Baptist Hospital Human Resources Departments participated in a project incorporating the Gallup talent-based assessment tool in their hiring process to reduce employee turnover. The purpose was to measure the retention potential of each applicant and acquire a better understanding of how well they might blend in with the organization. The Gallup assessment tool is an online assessment that gives managers a predicted match between the applicant and the organization in regards to cultural and personality characteristics (Sloan, 2011). Employee turnover data was collected for three years, 12 months prior to the implementation of the tool and 26 months after. Descriptive statistics were used and revealed downward trends in turnover after initiating the use of the talent based assessment. Voluntary turnover percentages declined from 1.26% to 1.11% and total

turnover percentages declined from 1.66% to 1.51% shortly after the implementation of the Gallup tool.

An integrative literature review by Kennedy, Curtis, and Waters (2014) was initiated to determine if a relationship exists between personality and choice of nursing specialty. They searched five databases and used the preferred reporting items for systematic reviews and meta-analyses (PRISMA) framework, selecting 13 of 549 articles that were relevant to their literature review which focused on nurses' personality types in a clinical specialty area. Published literature on this subject was limited. The most common personality tools used in the articles were the Personal Style Inventory and the Myers Briggs Type Indicator. The areas of study were exploring personality characteristics in a nursing specialty area, comparing personality characteristics between different specialty areas, the effects of personality characteristics on stress and burnout and the relationship between personality and job satisfaction (Kennedy et al., 2014). They found evidence that a relationship possibly exists between personality characteristics, nursing specialty choice, job satisfaction, and burnout concluding personality characteristics best suited for the particular nursing specialty can result in increased workplace efficiency, job satisfaction, and staff retention (Kennedy et al., 2014). Workplace efficiency, job satisfaction, and staff retention are characteristics of a healthy work environment. An article by Longo (2010) discussed the effects of disruptive behaviors on staff and patient safety and the work environment. She reviewed the causes, evaluated initiatives and suggested interventions and strategies for contending with disruptive behaviors. The most common reported type of disruptive behavior was verbal abuse from other nurses (Longo, 2010). One of the most common causes for disruptive

behavior in healthcare is conflict, a difference of opinion in how a situation should have been handled (Longo, 2010). A breakdown in communication and collaboration can be a result of disruptive behaviors which can threaten patient safety (Longo, 2010). Developing sound policies and procedures, creating educational initiatives, improving communication skills and the desire to communicate, implementing zero-tolerance policies and confronting disruptive behaviors were the suggested interventions and strategies. The Joint Commission holds healthcare organizations accountable for having policies and procedures in place to address any disruptive behaviors. Managers can examine their departments for disruptive behaviors by rounding on their units, becoming aware of the needs and concerns of the patients and staff (Longo, 2010). Personality testing can assist managers in avoiding applicants with potential disruptive behavioral tendencies that can negatively affect nurse satisfaction and work environment.

A study by Sawyerr, Srinivas and Wang (2009) examined the relationship between personality factors and job performance in an attempt to understand the effects of emotional exhaustion on that relationship. They used a questionnaire to survey 194 of 521 employees and their supervisors from eight different call centers. The sample was 29% male with an average age of 35 and an average of three years in current position. Sawyerr et al. (2009) used the five factor model and locus of control to measure personality and the emotional exhaustion scale to measure job burnout. Conscientiousness, agreeableness, emotional stability, extraversion/introversion, and openness to new experience were the variables from the five factor model. They used service performance, absenteeism, and intent to turnover to assess overall employee performance. Data from performance evaluations conducted by supervisors was used to

determine the relationship between personality, exhaustion, and performance. The relationships between employee personality characteristics and service performance were significantly related. There was a positive relationship between variable agreeableness and absenteeism ($\beta = 0.284$; $\rho = 0.027$), between emotional stability and intent to turnover ($\beta = 0.758$; $\rho = 0.017$), and between openness to new experience and intent to turnover ($\beta = 0.515$; $\rho = 0.024$) (Sawyerr et al., 2009). The personality factors from the five factor model were positively related to the performance measures and information gained in the study could be helpful in improving their hiring process, work redesign programs and training that could decrease costs and improve employee satisfaction (Sawyerr et al., 2009). More research is needed to determine the effect of burnout on the relationship between personality and performance.

Clinical skills tests can give the employer an idea of the areas where the applicant is most knowledgeable. Choudry, Fletcher, and Soumerai (2005) conducted a systematic review of the relationship between clinical experience and quality of care. They used a standardized data extraction form and selected 62 studies from 1966 to 2004 for their study. Knowledge or quality of care outcome and physician age or years since graduation were the variables used to explain the relationship. Fifty two percent of the studies reported decreasing performance with increasing years of practice for all outcomes, 21% reported decreasing performance for some outcomes, 3% reported performance increased with experience initially and then decreased as the physicians attained more years of experience, 2% reported better performance with more years of practice for some outcomes and 2% reported increased performance with increasing experience with all outcomes (Choudhry et al., 2005). These results indicated physicians

that have practiced longer may need quality improvement interventions (Choudhry et al., 2005).

A situational judgement test measures the applicant's skills needed for successful patient, family, and peer interaction. It can give the employer some insight to their ability to communicate and work on a team. A systematic review by Patterson et al. (2012) collected research evidence from several databases to evaluate the use of situational judgement tests for assessing non-academic attributes in selection processes. Examples of non-academic attributes are integrity, empathy, and peer awareness. Assessing these attributes can assist employers in predicting the performance level of an applicant. The final review consisted of 39 articles providing evidence that situational judgement tests have good levels of validity and reliability for assessing non-academic attributes as compared to personality and intelligence quotient tests (Patterson et al., 2012). Patterson et al. (2012) found reports of a test-retest reliability of $r = 0.84$, a parallel form reliability of $r = 0.76$ and a criterion-related validity score of $r = 0.34$ for situational judgement tests. Situational judgement tests can be cost efficient and have been positively perceived by applicants (Patterson et al., 2012).

In an exploratory, longitudinal study by Koczwara et al. (2012), the validity of cognitive ability tests compared to clinical problem-solving tests and situational judgement tests was evaluated. The purpose was to determine whether the cognitive ability test would most likely provide a valid prediction of job performance as compared to the combination of a situational judgement test and clinical problem-solving test. The non-verbal mental ability test is an example of a cognitive ability test which is used to assess general knowledge of applicants. Clinical problem-solving tests assess the

applicant's ability to solve problems related to a management strategy for a patient using clinical knowledge and a situational judgement test assess an applicant's empathy, integrity, and resilience by providing work-related scenarios where they have to choose a response from a list (Koczwara et al., 2012). The sample consisted of 219 junior doctors, at the average age of 30, applying for general practice training in the United Kingdom. Fifty three percent of the junior doctors were female. The clinical problem solving test and situational judgement test had higher correlations with overall selection center scores ($r = 0.38$ and $r = 0.50$) as compared to the non-verbal mental ability test ($r = 0.30$) (Koczwara et al., 2012, p. 404). Hierarchical multiple regressions were performed to evaluate whether the non-verbal mental ability scores could predict selection center scores above the clinical problem-solving and situational judgement tests. The situational judgement test represented the highest amount of variance in performance (28.9%) and the clinical problem solving test explained an additional 2.5%. The non-verbal mental ability test had a lack of validity over the other two tests. Koczwara et al. (2012) found the situational judgement test to be the best predictor of performance and is the best predictor of all outcomes when combined with the clinical problem-solving test.

A news report by Weber (2015) stated personality tests are becoming more popular and employers are less likely to gamble on an applicant that tests poorly. Organizations are taking longer to fill positions, waiting to find applicants with high abilities and personalities that will work well with the organization (Weber, 2015). Organizations are reporting the costs of pre-employment testing is going down and combined with positive results can make pre-employment testing very appealing. Statistical modeling and technology give organizations customized tests that can assess

technical and communication skills, personality, organizational fit, and compatibility with different work teams (Weber, 2015).

Job Satisfaction

Many variables and skills can be factored into a person's job success and satisfaction. Some of those skills are critical thinking, communication, personality, bedside manner, and leadership. Examples of variables would be work environment, availability of resources, and support from leadership. Pre-employment tests may allow employers to evaluate those skills and assist them in selecting the best performer. Employees that are dissatisfied with several aspects of their jobs are not likely to consider their jobs successful and job satisfaction is the most prominent aspect of job success (Heslin, 2005). Darehzereshki (2013) found that poor performance evaluations can affect employees' attitudes, engagement, cause them to question their value to the organization and their value to their peers decreasing their intent to stay.

McCulloch and Turban (2007) used a validation strategy to examine the value of person-organization fit as a selection tool to predict performance and length of service for call center employees. Person-organization fit represents the characteristics that the organization and applicant have in common. It is expected to generate positive outcomes by helping to create a work environment where staff possesses similar values. Person-organization fit has been linked to job success and performance (McCulloch & Turban, 2007). The sample consisted of employees from 14 call centers associated with 11 different companies. One hundred seventy four employees were still employed and 54 had quit. The majority of the participants were white (85%) and female (58%) with an average age of 33 years old. The average length of time for employment was almost two

years. The participants completed a person-organization fit and cognitive ability test. Criterion measures consisted of job performance, employee retention, job satisfaction, and control variables. McCulloch and Turban (2007) discovered that person-organization fit is positively related to retention (r = 0.36) and explained 9% of the variance and was positively related to job satisfaction (r = 0.37) and explained 11% of the variance. Person-organization fit provided increased validity with cognitive ability tests to predict employee retention. The cognitive ability test is related to job performance (r = 0.23). Person-organization fit is not related to job performance but, is related to job satisfaction which is positively related to retention (r = 0.38). This study suggests organizations that use pre-employment tests to predict retention must use high validity tests that include a cognitive and person-organization piece.

A cross-sectional analysis by Laschinger (2012) was conducted from a mail survey distributed to recently graduated nurses to examine work-life experiences in addition to predictors of job satisfaction and turnover intentions. A New Graduate Work-life and Retention Model was used to lead the study, describing situational and personal factors that influence job satisfaction and intent to leave or stay. Personal factors are represented by a core self-evaluation and situational factors consist of empowerment, work environment, and leadership. These factors can affect nursing burnout, engagement, incivility, bullying, and employees' mental and physical health (Laschinger, 2012). During her research, Laschinger (2012) found that job satisfaction was related to workplace empowerment, job stress, turnover intentions, and perceived ability to provide high quality care. A descriptive correlational design was used to analyze survey data from a sample that consisted of 342 new graduate nurses in their first and second years of

practice with an average age of 28 years old. Ninety eight percent of them had a Bachelor's of Science in nursing degree. The majority of them worked full-time in medical-surgical units and reported nursing was their first career choice. Burnout, empowerment, and engagement were related to job satisfaction ($r = -0.48$, $r = 0.57$ and $r = 0.52$). Empowerment and engagement were significant predictors of turnover intentions (-0.22, -0.23). Supervisor and co-worker incivility and burnout were significant predictors of job satisfaction for first year nurses only (0.13, -0.20 and -0.25). Nursing leaders can focus on these factors to improve work environments that support positive nurse retention (Laschinger, 2012).

Larrabee et al. (2003) performed a non-experimental and predictive study to evaluate the relationships of nurse attitudes, context of care and structure of care on job satisfaction, and intent to leave. The Nursing Systems Outcomes Research model and cognitive model of empowerment were used to lead the study. The sample consisted of 90 nurses from different nursing areas, employed by a 450-bed university medical center in West Virginia. Ninety three percent were women with an average age of 34 years old and 50% held a bachelor's degree in nursing. There was a difference of variable scores among nursing areas. Most nurses reported they intended to stay and over a third reported uncertainty. Descriptive statistics revealed job satisfaction was the best predictor of intent to leave (0.25) and empowerment was the best predictor of job satisfaction (0.54). The results of this study support the importance of nursing leaders to monitor job satisfaction and implement necessary strategies to maintain positive job satisfaction among nurses (Larrabee et al., 2003).

Summary

Nursing shortage and nurse turnover can really complicate things for healthcare organizations, consuming resources, and negatively affecting organizational outcomes. Nurses' personal characteristics and attitudes combined with their perceptions of job satisfaction and success could affect nurses' intention to stay. Job satisfaction has been directly linked to retention and there are many variables that influence job satisfaction. Pre-employment tests may be helpful in avoiding applicants with disruptive behavior tendencies, placing employees in nursing areas where they can be successful, selecting applicants with a good person-organization fit and that are compatible with different interdisciplinary groups. Job satisfaction is a strong predictor of nurses' intentions to stay, indicating the possible importance for nursing leaders to have strategies in place to create a high probability of success for nurses. Pre-employment tests may be the tools that healthcare organizations could use to predict job success, maintain nurse satisfaction and positive work environment, and possibly improve nurses' intent to stay.

CHAPTER III

Methodology

Organizations have claimed that pre-employment testing was helping them reach their hiring goals and desired outcomes. There are arguments for and against the validity of pre-employment testing with little evidence to support either side. This study followed a quantitative research design to analyze the job satisfaction and intent to stay of nurses that completed a pre-employment test compared to nurses that did not.

Design, Setting, and Sample

A comparative descriptive design was used to address the research question. A comparative descriptive design was indicated to examine and evaluate differences among two or more study variables (Burns & Grove, 2009). Descriptive statistics and analysis can help describe differences among nurses who participated in pre-employment testing and those that did not in regards to job satisfaction and intent to stay (Burns & Grove, 2009). This study did not manipulate variables or implement any interventions or treatments which supported the use of a comparative descriptive design (Burns & Grove, 2009).

The data sample in this study was determined by using a convenience sampling method. Burns and Grove (2009) described this method as choosing available participants who happened to fit in the time frame and area of the study. The study included bedside registered nurses from a public North Carolina hospital. All nurses of all age ranges that provided direct patient care in the medical surgical intensive care unit, pulmonary medical unit, pulmonary step-down unit, medical surgical progressive care unit, neurological trauma intensive care unit, staffing pool, and renal medicine unit were

eligible to complete the survey. The convenience sample consisted of 252 nurses from these nursing units. Thirty percent was the expected response rate based on past experience with survey responses from these units. Nurses must have completed the Individual Workload Perception Scale - Revised to meet criteria for inclusion in this study.

Data Collection and Instruments

Once permission for the study was obtained from the university and hospital Institutional Review Boards, data was collected by distributing a demographic information form and the Individual Workload Perception Scale - Revised (Cox et al., 2006) through the use of an electronic survey (Survey Monkey). No individual data was reported ensuring there would be no identifiers that would make possible any reporting other than aggregate reporting.

The pre-employment testing calculates a score based on a clinical, behavioral, and situational assessment. Each assessment consisted of multiple choice questions and scores represent the percentage of correct answers. Bands (A-B-C-D-E-F) were used to represent the pre-employment testing score and to provide a more objective screening process. An applicant that scores B or better is ideal, scores a C is average and scores below C is below average. Pre-employment testing scores represent expected job success, indicating the higher the score the more likely to be successful. All nurses in the sample that completed the pre-employment testing scored an average grade of C or above to meet the minimum requirement for employment. Pre-employment testing was not measured and individual scores were not necessary for this study.

Job satisfaction and intent to stay was measured by the Individual Workload Perception Scale - Revised. This tool was created to assist healthcare organizations in designing interventions to improve nurses' perception of their workload (Cox et al., 2006). Maslow's Theory of Human Motivation was the framework behind this tool that assesses nurses' work environments based on different levels of needs. The Individual Workload Perception Scale – Revised is a 29-item Likert scale instrument that took the participant around 10 minutes to complete. Manager Support, Peer Support, Unit Support, and Workload are the subscales used to build the Individual Workload Perception Scale – Revised. Intent to stay was the fifth subscale that was produced by the first four, and the total of all five subscales resulted in the overall nurse satisfaction score. Intent to stay was measured by items 11, 13, 17, 23, and 28, and job satisfaction was measured by all 29 items. Descriptive statistics were conducted by utilizing SPSS statistical software to compare and describe the data.

The Individual Workload Perception Scale - Revised has two measurement instruments. One is a Demographic Information Form and the second instrument is the survey itself, the Individual Workload Perception Scale - Revised. Based on the continuing validation of the Individual Workload Perception Scale - Revised survey, changes have been implemented and the survey went from an original 46 item to a current 29 item survey. The Individual Workload Perception Scale was originally tested in 2001 at Children's Mercy Hospitals and Clinics in Kansas City, MO. This was a 187 bed pediatric hospital in 2001. Six hundred and eighty seven nurses were included in the original testing. Cronbach's Alpha was used to test internal consistency. Manager Support, Peer Support, Unit Support, and Workload were individually analyzed with

logistic regression and a designated cutoff score for Intent to Stay. These independent variables were also analyzed with multiple linear regression analysis using intent to stay as a continuous variable. Findings of the original Individual Workload Perception Scale regarding internal consistency reliability consisted of alpha coefficients ranging from 0.61-0.83 (Cox, Teasley, Lacey, & Olney, n.d., p. 21). They were manager support – 0.76, peer support – 0.71, unit support – 0.61, workload – 0.73 and intent to stay – 0.83 (Cox et al., n.d.). The four subscales manager support, peer support, unit support, and workload combined were predictive of intent to stay at the significance level of 0.000. Nurses with more support and who perceived they had reasonable workloads were more likely to have a higher intent to stay score. The four subscales combined accounted for 45% of the variance for intent to stay.

Testing indicated the Individual Workload Perception Scale - Revised is a valid tool. It showed the relationship between support aspects of the work environment of nurses and their Intent to Stay. It also showed a relationship between workload and nurse satisfaction. As of 2009, the Individual Workload Perception Scale - Revised has been administered in 27 hospitals, including two in China and one in Japan (Cox et al., n.d.). Over 13,700 nurses completed the Individual Workload Perception Scale and Individual Workload Perception Scale - Revised from 2001 to 2009. Findings of the Individual Workload Perception Scale - Revised regarding current internal consistency reliability consists of coefficients ranging from 0.68 to 0.93. They were Manager Support – 0.88, Peer Support – 0.86, Unit Support – 0.68, Workload – 0.80, Intent to Stay – 0.89 and Nurse Satisfaction – 0.93 (Cox et al., n.d.).

Ethical Consideration and Data Analysis

The Institutional Review Board of the hospital where the research was being conducted granted permission to complete this study. Permission from the Institutional Review Board at the University was also requested. The confidentiality of participants was ensured by using an electronic survey administration system - Survey Monkey©.

Descriptive statistics were used to analyze the data. T-tests were conducted to determine whether there was a significant difference in the mean scores of the 29 items on the Individual Workload Perception Scale – Revised survey tool between nurses that completed pre-employment testing and those that did not. The 29 questions were divided into two dimensions: job satisfaction and intent to stay. T-tests were conducted to compare the means of the indices. General linear models using the two dimensions were created to investigate the effects of the demographic variables on job satisfaction and intent to stay.

CHAPTER IV

Results

Pre-employment Testing to Improve Nurse Retention is a study that compared the perceived job satisfaction and intent to stay of nurses that completed pre-employment testing against those that did not complete pre-employment testing. The participants of this study consisted of bedside nurses from various nursing units. Participants were divided into two groups: nurses that had completed pre-employment testing and nurses that had not. There were 33 participants that had completed pre-employment testing and 78 participants that had not, indicating that both groups were well represented in the study sample.

The group that completed pre-employment testing had a mean age of 35.96 years (SD = 11.90) with participants ranging in age from 22 to 66 years. The majority was female, held at least a bachelor's degree, did not hold a certification, had less than three years of nursing experience, and had been employed for less than two years with their current employer. The group that did not complete pre-employment testing had a mean age of 41.87 years (SD = 11.38) with participants ranging from 24 to 65 years. The majority was also female, held at least a bachelor's degree and did not have a certification in their specialty area. The majority of the group that did not complete pre-employment testing had more nursing experience and had been employed longer with their current employer. Table 1 provides the means and standard deviations of all demographic data for the study sample.

Table 1

Demographic Data

	Pre-employment = Yes			Pre-employment = No				
Variable	n	M	SD	n	M	SD	T-value	P-value
Age	31	35.9677	11.9065	72	41.8750	11.3893	-2.34	0.0230
Gender	33	1.7273	0.4523	76	1.8684	0.3403	-1.61	0.1147
Education	33	3.7879	0.5999	78	3.6538	0.8190	0.96	0.3400
Certification	33	1.6667	0.4787	78	1.6026	0.4925	0.64	0.5250
Years Employed	33	5.9206	8.4936	78	11.0577	7.7501	-2.99	0.0042
Years Nurse	33	7.7312	10.8748	78	14.3910	10.3897	-2.99	0.0041

This study addressed the following research question: What is the difference in job satisfaction and intent to stay between nurses that completed pre-employment testing and those that did not? The Individual Workload Perception Scale – Revised survey tool measures intent to stay, job satisfaction, and was used to obtain data that could be analyzed using descriptive statistics and t-tests. The means for the group who participated in pre-employment testing were compared to those who did not participate in pre-employment testing on the demographic variables and on the questions on the survey. T-tests were conducted to determine which numeric variables were significantly different for the two groups. Since there were a large number of questions on the survey, it is likely that one or more questions would be judged to be statistically significant in the sample when it is not actually related to whether the nurse participated in pre-employment testing. To address this issue, questions were divided into two dimensions:

job satisfaction and intent to stay. On each dimension there were some questions where a high score on the 1-5 scale represented a positive attitude about that dimension and some that represented a negative attitude. Those questions that represented a negative attitude were reversed by changing a 5 to a 1, a 4 to a 2, etc. Next, the questions were averaged for each of the two dimensions to create an index. T-tests were conducted to compare the means of the indices between the two pre-employment testing groups.

For the numeric demographic variables, nurses who participated in the pre-employment testing were significantly younger, had less experience with their current employer, and less experience overall than those who did not participate. Two questions were significantly different (p-value < 0.05) between the two groups. They were question 24 (My manager is competent to provide basic patient care on the unit) and question 28 (My current work environment makes me want to stay and work here.). Table 2 shows nurses who participated in pre-employment testing scored significantly higher on average than the other group of nurses on questions 24 and 28. Table 3 shows that the scores on intent to stay and job satisfaction were slightly higher for the group that completed pre-employment testing but, the pre-employment testing was not significantly related to intent to stay or job satisfaction (p-value > 0.05).

Table 2

Comparing Significantly Different Variables

	Pre-employment = Yes			Pre-employment = No				
Variable	n	M	SD	n	M	SD	T-value	P-value
Question 24	33	4.1818	0.6826	78	3.7308	0.9760	2.78	0.0067
Question 28	33	3.8485	0.8337	78	3.2692	1.0278	3.11	0.0026

Table 3

Comparing Pre-employment Groups on Indices

	Pre-employment = Yes			Pre-employment = No				
Variable	n	M	SD	n	M	SD	T-value	P-value
Intent to Stay	33	3.7697	0.7892	78	3.5385	0.8542	1.38	0.1735
Job Satisfaction	33	4.0207	0.5210	74	3.8741	0.4411	1.41	0.1653

The effects of the demographic variables on job satisfaction and intent to stay were of interest, and since some of the demographic variables might potentially suppress the perceived relationship between pre-employment testing and job satisfaction or intent to stay, a spurious perceived relationship general linear model using the two dimensions as response variables were created to investigate the effects jointly. In such a model, effects for one variable were estimated while adjusting for the effects of the other variables in the model. However, there were several demographic variables in which some were expected to be highly correlated with each other and possibly the pre-employment testing variable. A stepwise procedure for inclusion into the model was utilized. In this procedure, the variable with the lowest p-value was first added to the model. Next, the variable with the lowest p-value in the model including the first variable was added. The process was continued until none of the remaining variables were significantly related to the response in the presence of the previously selected variables. Table 4 provides the Stepwise linear model results for intent to stay and Table 5 provides the results for job satisfaction. None of the demographic variables or the pre-employment testing was significantly related to intent to stay or job satisfaction.

Table 4

Stepwise Linear Model Results for Intent to Stay

Variable	P-value by itself
Pre-employment Test	0.1855
Gender	0.2240
Education	0.2217
Certification	0.6107
Age	0.6259
Years Employed	0.3384
Years Nurse	0.3013

Table 5

Stepwise Linear Model Results for Job Satisfaction

Variable	P-value by itself
Pre-employment Test	0.1367
Gender	0.3932
Education	0.1683
Certification	0.7103
Age	0.0901
Years Employed	0.7767
Years Nurse	0.3862

CHAPTER V

Discussion

The nursing shortage continues to be a problem among hospitals and other healthcare organizations across the country. Nursing turnover is one contributor to the nursing shortage that is costly and consumes resources that are needed for improving quality patient care instead of just striving to maintain adequate staffing numbers. Evidence has shown that job success or job satisfaction has been linked to predicting nursing retention in research (Murrells et al., 2008). Pre-employment testing has been mostly used by organizations outside of healthcare to determine whether an applicant would fit in to a certain culture and climate or have the desire and motivation to meet organizational goals. The purpose of this study was to determine the difference in job satisfaction and intent to stay between nurses that completed pre-employment testing and those that did not.

Implication of Findings

Results of the study indicated pre-employment testing could improve the intent to stay and job satisfaction of nurses. T-tests revealed a significant difference between the mean responses of the two groups on question 24 (My manager is competent to provide basic patient care on the unit) of the Individual Workload Perception Scale – Revised survey tool. Question 24 was one of the 29 questions that measured job satisfaction. The nurses who completed pre-employment testing were significantly more agreeable their managers were competent to provide basic patient care which could indicate increased job satisfaction. T-tests also revealed a significant difference between the mean responses on question 28 (My current work environment makes me want to stay and

work here). This was one of five questions on the Individual Workload Perception Scale – Revised that measures intent to stay. Nurses who completed pre-employment testing were significantly more agreeable their current work environment makes them want to stay and continue to work there.

The mean scores on intent to stay and job satisfaction were slightly higher for the group of nurses that completed pre-employment testing but, t-test indicated there were no significant relationships (p-value > 0.05) between pre-employment testing and job satisfaction or intent to stay. Stepwise linear model results for both job satisfaction and intent to stay revealed there were no significant relationships among the two and pre-employment testing or the demographic variables. There was minimal previous literature to compare results with. The literature available used different forms of pre-employment testing.

The information found in the results of this study provided support that pre-employment testing could improve nurse retention. There was no significant difference in the means for the two groups on 27 of the 29 questions from the Individual Workload Perception Scale – Revised survey tool but, the group that completed pre-employment testing was slightly more agreeable they were satisfied with their jobs and had a slightly stronger intent to stay. Previous research indicated nurse job dissatisfaction was the main predictor of intent to leave (Larrabee et al., 2003). Healthcare organizations should consider using pre-employment testing to assist nursing leaders in determining which nursing units or environments would provide the nurse applicants with the highest chances of success, leading to greater job satisfaction and a higher intent to stay.

Application to Theoretical/Conceptual Framework

Fishbein's and Ajzen's Theory of Reasoned Action was an appropriate theoretical/conceptual framework used to guide this study. The Theory of Reasoned Action suggested a person's intention to perform a behavior was driven by their attitude and behavioral beliefs regarding the behavior. In this study, knowledge and personality represented attitude, job satisfaction represented intention, and intent to stay was the behavior.

Pre-employment testing assisted in determining the personality traits and knowledge base of the nurses who completed testing, creating a better understanding of where the applicant would be most successful within the healthcare organization. Placing nurses in areas where they would successfully mix with like personalities of other nursing staff would more likely create more positive subjective norms. The Theory of Reasoned Action indicated a nurse who believed they were successful and satisfied with their job and believe their co-workers think they are successful would be likely to stay and continue to work there. Results of the study supported the Theory of Reasoned Action by indicating nurses who had completed pre-employment testing had slightly more job satisfaction and a stronger intent to stay. The group that completed pre-employment testing was significantly more agreeable their current work environment makes them want to continue working in that environment further supporting the Theory of Reasoned Action.

Limitations and Implications for Nursing

The findings of this study were limited due to the small sample size, one testing site, and the use of a convenience sample. Being restricted to a particular test site and

setting contributed to the small sample size. The use of a convenience sample in addition to the limited pre-employment testing time period resulted in a small group of nurses that had completed pre-employment testing. The testing site for this study had used pre-employment testing for two years. Data was not available to determine how many nurses had completed pre-employment testing within that two year period and the number that are still currently employed. Further research is needed, testing several different sites and allowing time for more nurses to complete pre-employment testing in order to obtain a larger sample size.

Nursing leaders must continue to focus on improving nurse retention to ensure their patients are receiving high quality nursing care. They must develop strategies focusing on the continuing nursing shortage and that address organizational controlled factors affecting nurse retention. Job satisfaction must be improved and maintained at a high level in order to entice nurses to stay. Job satisfaction can be improved by providing adequate resources and placing applicants in nursing environments where they can be successful. Nursing leaders should empower nurses through shared governance, committees, and opportunities to develop new processes (Lartey, Cummings, & Profetto-McGrath, 2014). Nurses' work stress can be reduced by clearly defining expectations and job descriptions, providing support from leadership, using transparent communication, and maintaining a desirable work environment.

Nurses must feel valued by being recognized and rewarded for their achievements and successes. Healthcare organizations should create opportunities for advancement and encourage nursing leaders to coach and develop their staff (Mbemba, Gagnon, Pare, & Cote, 2013). Opportunities to serve on interdisciplinary teams that are creating new

organizational processes provide nurses with a sense of ownership. This study's finding that nurses who completed pre-employment testing were significantly more agreeable their work environment makes them want to stay and continue to work there supports the need to place nurses in areas and roles where they would be most successful and satisfied. Healthcare organizations should consider using pre-employment testing to assist nursing leaders in determining which nursing units or environments would provide the nurses with the highest chances of success, leading to greater job satisfaction and a higher intent to stay. The pre-employment testing could be focused on clinical skill, personality, situational judgement, or all of the above and should match the mission and goals of the organization. Pre-employment testing could be the key to retaining nurses and freeing up resources to be used towards improving nursing care.

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